



MC4560

LINEAR INTEGRATED CIRCUIT

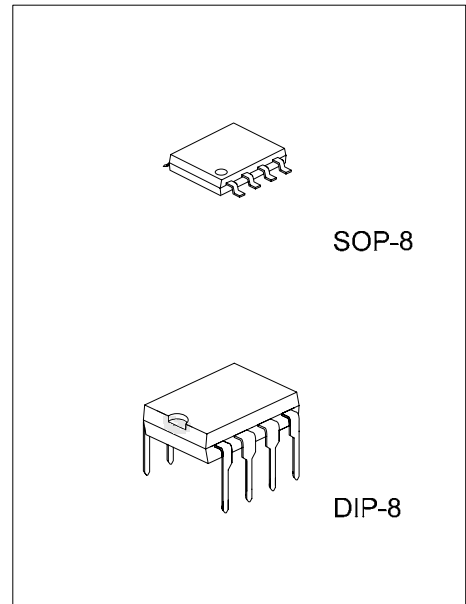
DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

The UTC **MC4560** is a dual operational amplifier suitable for driving 20V peak-to-peak into 400Ω loads. It offer many features which provide the capability of wider bandwidth, and higher slew rate to make it ideal for active filters, data and telecommunications, and many instrumentation applications.

FEATURES

- *Operating Voltage (±4V~±18V)
- *Wide Gain Bandwidth Product. (10MHz typ.)
- *Slew Rate (4V / μs typ.)
- *Bipolar Technology



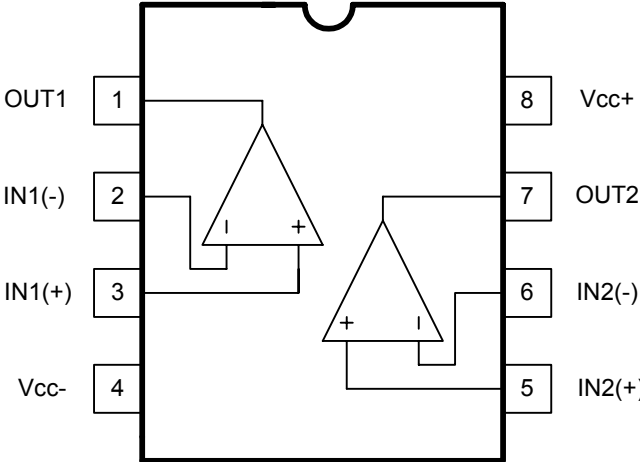
*Pb-free plating product number: MC4560L

ORDERING INFORMATION

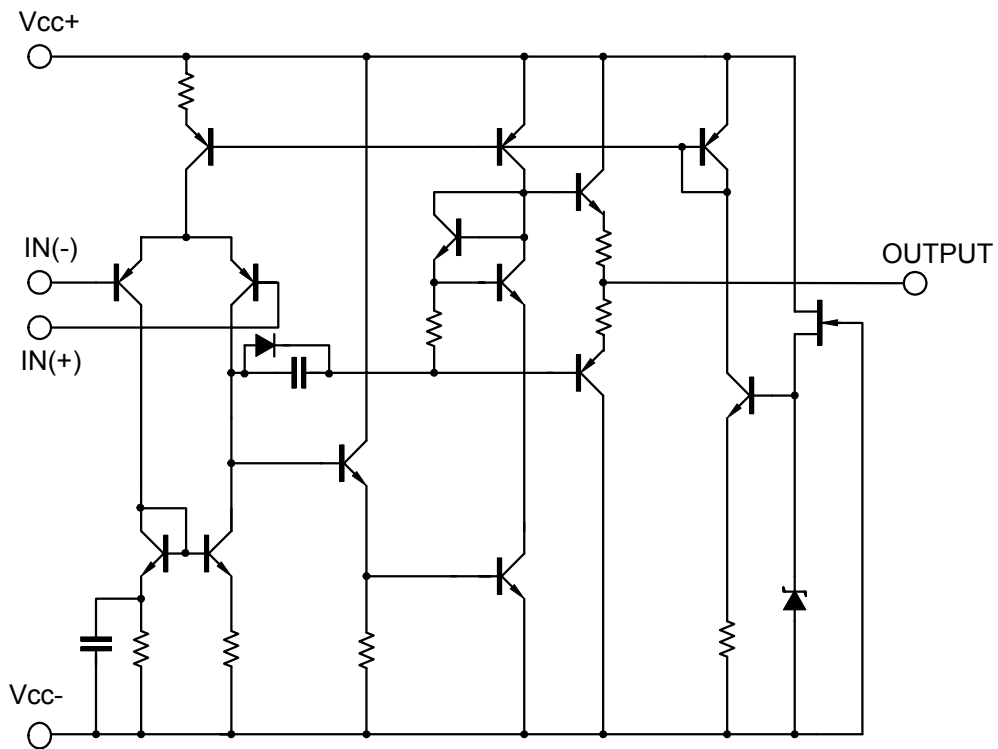
| Ordering Number | | Package | Packing |
|-----------------|-------------------|---------|-----------|
| Normal | Lead Free Plating | | |
| MC4560-D08-T | MC4560L-D08-T | DIP-8 | Tube |
| MC4560-S08-R | MC4560L-S08-R | SOP-8 | Tape Reel |
| MC4560-S08-T | MC4560L-S08-T | SOP-8 | Tube |

| | |
|---|--|
| <p>MC4560L-D08-T</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p> | <p>(1) R: Tape Reel, T: Tube (2) D08: DIP-8, S08: SOP-8 (3) L: Lead Free Plating, Blank: Pb/Sn</p> |
|---|--|

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25)

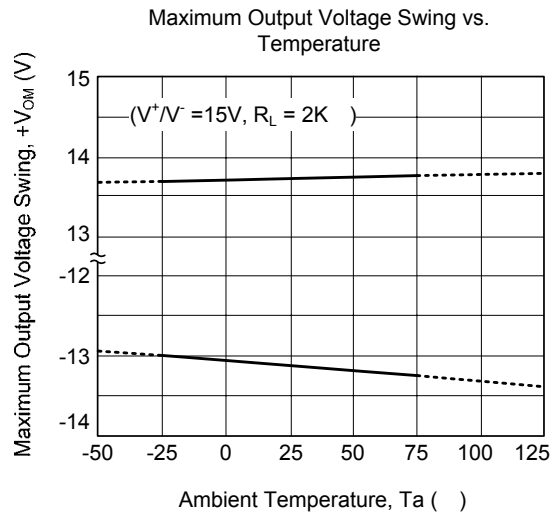
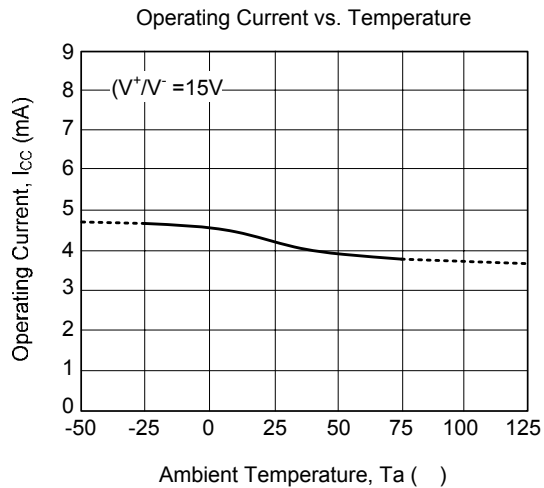
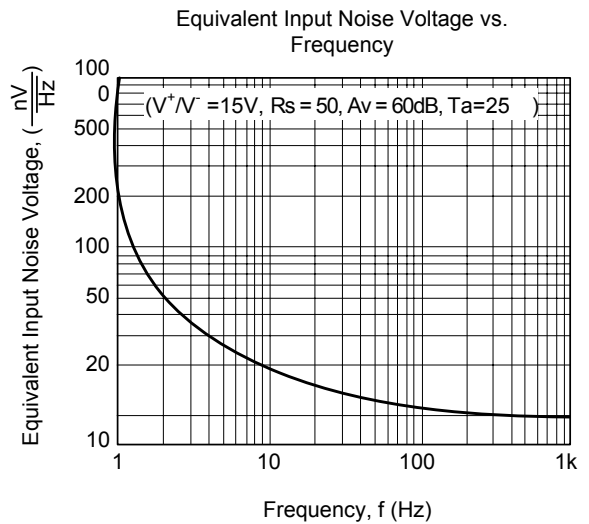
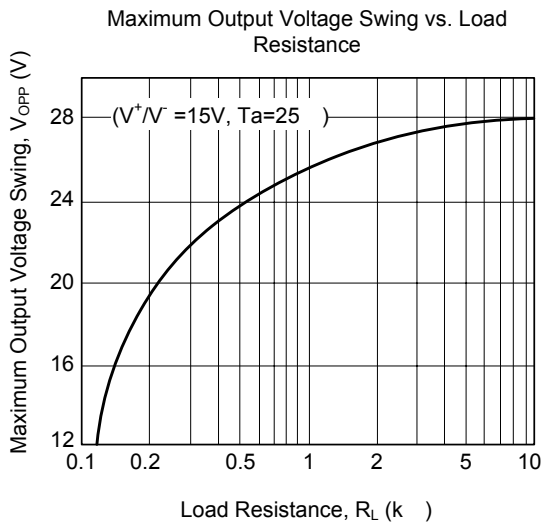
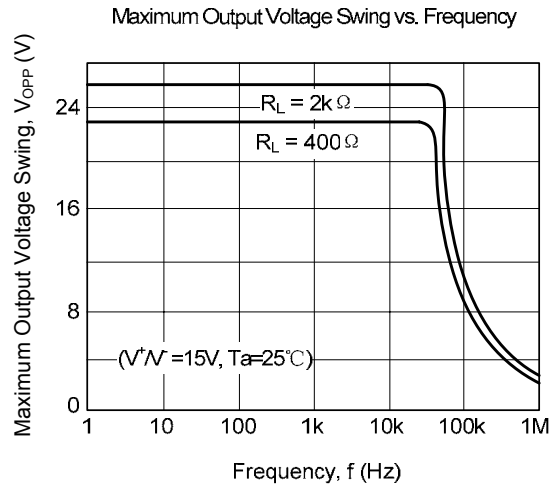
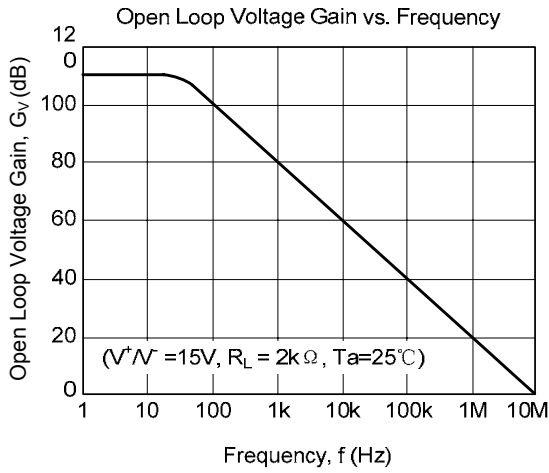
| PARAMETER | | SYMBOL | RATINGS | UNIT |
|-----------------------------|-------|----------------------|------------|------|
| Supply Voltage | | V+/V- | ±18 | V |
| Differential Input Voltage | | V _{I(DIFF)} | ±30 | V |
| Input Voltage | | V _{IN} | ±15(Note1) | V |
| Power Dissipation | DIP-8 | P _D | 500 | mW |
| | SOP-8 | | 300 | mW |
| Operating Temperature Range | | T _{OPR} | -20 ~ +75 | °C |
| Storage Temperature Range | | T _{STG} | -40 ~ +125 | °C |

Note: 1. The absolute maximum input voltage is equal to the supply voltage in case supply voltage less than ±15V.
 2. Absolute maximum ratings are those values beyond which the device could be permanently damaged.
 Absolute maximum ratings are stress ratings only and functional device operation is not implied.

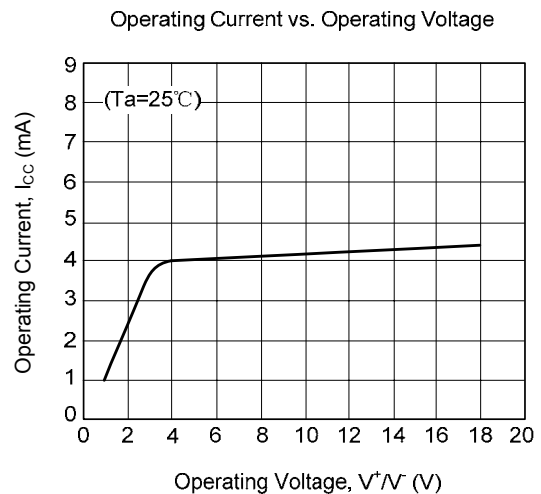
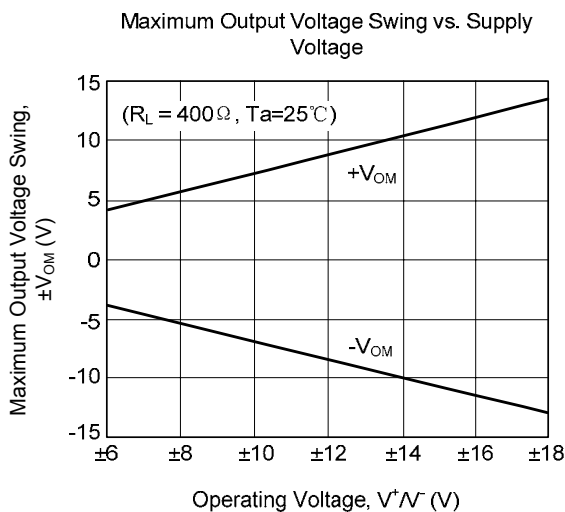
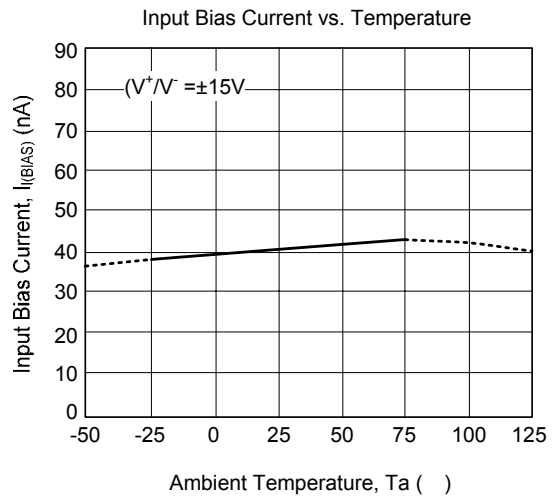
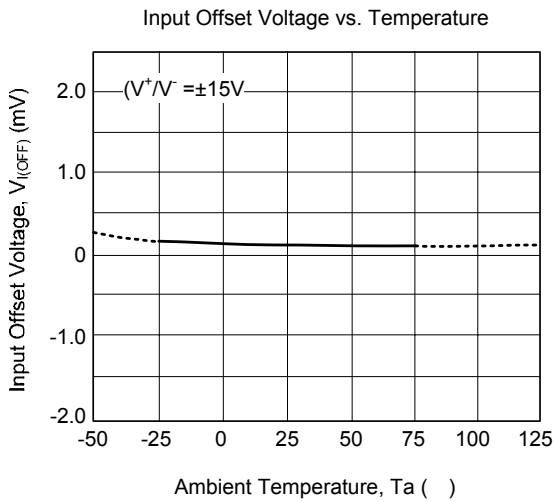
■ ELECTRICAL CHARACTERISTICS (Ta=25°C, V⁺/V⁻ =±15V)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------------------|----------------------|---|------|-------|-----|-------|
| Input offset voltage | V _{I(OFF)} | R _S ≤10kΩ | | 0.5 | 6 | mV |
| Input offset current | I _{I(OFF)} | | | 5 | 200 | nA |
| Input bias current | I _{I(BIAS)} | | | 40 | 500 | nA |
| Input Resistance | R _{IN} | | 0.3 | 5 | | MΩ |
| Large Signal Voltage Gain | G _V | R _L ≥2kΩ, V _{OUT} =±10V | 86 | 100 | | dB |
| Maximum Output Voltage 1 | V _{OM1} | R _L ≥2kΩ | ±12 | ±14 | | V |
| Maximum Output Voltage 2 | V _{OM2} | I _{OUT} =25mA | ±10 | ±11.5 | | V |
| Input Common Mode Voltage Range | V _{ICM} | | ±12 | ±14 | | V |
| Common Mode Rejection Ratio | CMR | R _S ≤10kΩ | 70 | 90 | | dB |
| Supply Voltage Rejection Ratio | SVR | R _S ≤10kΩ | 76.5 | 90 | | dB |
| Operating Current | I _{CC} | | | 4.3 | 5.7 | mA |
| Slew Rate | SR | | | 4 | | V/μs |
| Gain Bandwidth Product | GBP | | | 10 | | MHz |
| Equivalent Input Noise Voltage | eN | RIAA, R _S =2kΩ, 30kHz LPF | | 1.2 | | μVrms |

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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